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Amendments to the Claims

Please amend the claims as follows:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)
18. (Cancelled)

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19. (Currently Amended) ~~The computer and monitor viewable program of claim 16 wherein~~ A computer with a monitor viewable program that executes to display a histogram of image data on the monitor, the monitor contemporaneously displaying a screen image viewed on a monitor displaying the histogram, and displays a digital or analog control element that controls both compression and expansion of midtones, wherein activation of the midtone compression/expansion element accordingly alters the displayed image according to effects of programs underlying the control of the element, this histogram display and element being associated on a single logical screen display in which at least one other image data modification effect is present on the screen image as a cursor addressable or keyboard selectable image data modification effect, wherein luminance of the image is calculated from a combination of the RGB channels for a color image or by using the brightness values directly for a grayscale image and clipping is effected by converting all channel values below a threshold T to the value Ymin so that the remaining values lie from T to Xmax and then linearly stretching these latter values to the interval Xmin to Xmax.

20. (Currently amended) ~~The computer and monitor viewable program of claim 17 wherein~~ A computer with a monitor viewable program that executes to display a histogram of image data on the monitor, the monitor contemporaneously displaying a screen image viewed on a monitor displaying the histogram, and displays a digital or analog control element that controls both compression and expansion of midtones, wherein activation of the midtone compression/expansion element accordingly alters the displayed image according to effects of programs underlying the control of the element, this histogram display and element being associated on a single logical screen display in which at least one other image data modification effect is present on the screen image as a cursor addressable or keyboard selectable image data modification effect, wherein color channels of the image are processed either individually or by making independent changes to all channels at once and the stretching is accomplished with the algorithm:

$$Y = \begin{cases} Y_{\min}, & X < T. \\ Y_{\min} + (Y_{\max} - Y_{\min})(X - T) / (X_{\max} - T), & \end{cases}$$

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22. (Original) The computer and monitor viewable program of claim 19 wherein the clipping is effected by application of an algorithm to convert all channel values above a threshold T to Y_{\max} so that the remaining values lie from X_{\min} to T and then linearly stretch these latter values to the interval X_{\min} to X_{\max} .

23. (Original) The computer and monitor viewable program of claim 19 wherein the stretching is accomplished with

$$Y = \begin{cases} Y_{\max}, & X > T. \\ Y_{\max} - (Y_{\max} - Y_{\min})(T - X) / (T - X_{\min}), & \end{cases}$$

24. (Cancelled)

25. (Cancelled)

26. (Currently amended) ~~The computer and monitor viewable program of claim 25 wherein~~ A computer with a monitor viewable program that executes to display a histogram of image data on the monitor, the monitor contemporaneously displaying a screen image viewed on a monitor displaying the histogram, and displays a digital or analog control element that controls both compression and expansion of midtones, wherein activation of the midtone compression/expansion element accordingly alters the displayed image according to effects of programs underlying the control of the element, this histogram display and element being associated on a single logical screen display in which at least one other image data modification effect is present on the screen image as a cursor addressable or keyboard selectable image data modification effect, wherein a gamma function is used for contrast adjustment and the gamma function comprises:

$$Y = Y_{\max} (X / X_{\max})^{1/\gamma}$$

27. (Currently amended) ~~The computer and monitor viewable program of claim 24 wherein~~ A computer with a monitor viewable program that executes to display a histogram of image data on the monitor, the monitor contemporaneously displaying a screen image viewed on a monitor displaying the histogram, and displays a digital or analog control element that controls both compression and expansion of midtones,

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wherein activation of the midtone compression/expansion element accordingly alters the displayed image according to effects of programs underlying the control of the element, this histogram display and element being associated on a single logical screen display in which at least one other image data modification effect is present on the screen image as a cursor addressable or keyboard selectable image data modification effect, wherein a tilde function is used for contrast adjustment and the tilde function comprises:

$$Y = Y_{\max} \exp \{ -b [\ln (X_{\max} / X)]^p \}$$

Please add the following new claims:

28. (New) A computer program product storing computer-executable instructions defining a computer process, the computer process comprising:

computing a histogram representing statistics of pixel values associated with pixels in a digital image;

identifying a range of the pixels having pixel values substantially centered about a measure of central tendency of pixel values in the digital image;

detecting a setting of an adjustment control element having at least one setting controlling adjustment of pixel values of the digital image to cause histogram expansion within the range of pixels and having at least one setting controlling adjustment of pixel values of the digital image to cause histogram compression within the range of pixels;

adjusting the pixel values of the pixels within the range to expand or compress the histogram throughout the range, responsive to the detecting operation;

adjusting the pixel values of the pixels outside both sides of the range to compress or expand the histogram outside of the range and to maintain the measure of central tendency of the pixel values in the digital image, responsive to the detecting operation.

29. (New) The computer program product of claim 28 wherein the computer process further comprises:

displaying the histogram concurrently with the adjustment control element.

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30. (New) The computer program product of claim 28 wherein the computer process further comprises:

displaying a modified image exhibiting the adjusted pixel values.

31. (New) The computer program product of claim 28 wherein the computer process further comprises:

displaying a modified histogram exhibiting the adjusted pixel values.

32. (New) The computer program product of claim 28 wherein the computer process further comprises:

displaying a tone reproduction curve reflecting pixel value adjustments of the adjusting operations.

33. (New) The computer program product of claim 32 wherein the tone reproduction curve has a continuous first derivative.

34. (New) The computer program product of claim 32 wherein changes to the setting of the adjustment control element are reflected in the displayed tone reproduction curve.

35. (New) The computer program product of claim 28 wherein the pixel values of pixels within the range represent midtones and the adjustment control element includes a slider control element providing incremental control of midtone expansion and compression.

36. (New) The computer program product of claim 28 wherein the pixel values represent pixel intensities.

37. (New) A method comprising:

computing a histogram representing statistics of pixel values associated with pixels in a digital image;

identifying a range of the pixels having pixel values substantially centered about a measure of central tendency of pixel values in the digital image;

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detecting a setting of an adjustment control element having at least one setting controlling adjustment of pixel values of the digital image to cause histogram expansion within the range of pixels and having at least one setting controlling adjustment of pixel values of the digital image to cause histogram compression within the range of pixels;

adjusting the pixel values of the pixels within the range to expand or compress the histogram throughout the range, responsive to the detecting operation;

adjusting the pixel values of the pixels outside both sides of the range to compress or expand the histogram outside of the range and to maintain the measure of central tendency of the pixel values in the digital image, responsive to the detecting operation.

38. (New) The method of claim 37 further comprising:

displaying the histogram concurrently with the adjustment control element.

39. (New) The method of claim 37 further comprising:

displaying a modified image exhibiting the adjusted pixel values.

40. (New) The method of claim 37 further comprising:

displaying a modified histogram exhibiting the adjusted pixel values.

41. (New) The method of claim 37 further comprising:

displaying a tone reproduction curve reflecting pixel value adjustments of the adjusting operations.

42. (New) The method of claim 41 wherein the tone reproduction curve has a continuous first derivative.

43. (New) The method of claim 41 wherein changes to the setting of the adjustment control element are reflected in the displayed tone reproduction curve.

44. (New) The method of claim 37 wherein the pixel values of pixels within the range represent midtones and the adjustment control element includes a slider control element providing incremental control of midtone expansion and compression.

45. (New) The method of claim 37 wherein the pixel values represent pixel intensities.

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